

# Synopses

OCTOBER 1999, ISSUE 20



## preformed metal crowns

BY PETER READMAN BDSC (HONS)

Postgraduate Student in Paediatric Dentistry, School of Oral Health, University of WA  
Paedodontic Registrar, Princess Margaret Hospital for Children

Project Supervisor: John Winters BDSc MDSc Consultant Paedodontist, Princess Margaret Hospital for Children.  
Visiting lecturer, School of Oral Health Sciences, University of WA  
Paedodontist, Suite 7, The Perth Surgicentre, Ranelagh Crescent, South Perth

### Introduction

**Stainless steel crowns were pioneered by Humphrey in 1950 and have remained the best treatment for severely damaged primary teeth for almost 50 years.<sup>1,2</sup> It would therefore seem appropriate to review the clinical performance of stainless steel crowns and identify areas in which further research is needed.**

Stainless steel crowns are often used to restore primary and permanent teeth in children and adolescents where intracoronar restorations would otherwise fail. Intracoronar restorations require a reasonably intact tooth with sufficient structure to support the restorative material. This requirement often indicates the use of stainless steel crowns in the treatment of caries in the primary dentition. First, deciduous teeth have smaller clinical crowns with thinner enamel and dentine than their permanent successors. As a result, dental caries may destroy the tooth's integrity more rapidly resulting in a greater loss of tooth structure. Second, the pulps of deciduous teeth are larger with respect to the clinical crown, limiting the clinicians ability to adequately retain intracoronar restorations.<sup>3</sup>

The stainless steel crown technique offers many advantages over complex intracoronar restorations. These include ease of preparation and placement, minimal chairside time, versatility of the restorative technique, excellent retention and durability, ability to restore teeth with significant loss of coronal tooth structure, low cost, and a benign periodontal response. The only disadvantage of a well adapted stainless steel crown is the cosmetically prominent silver appearance.<sup>2,4</sup> Stainless steel crowns for primary molars are indicated:

1. Where extensive carious damage involves multiple surfaces of the tooth.
2. After traumatic coronal fracture involving multiple surfaces.
3. After pulp therapy of the tooth.
4. With severe enamel or dentinal anomalies such as extensive enamel hypoplasia, mineralisation defects, amelogenesis imperfecta, dentinogenesis imperfecta, vitamin D-resistant rickets and other such anomalies.
5. Abutment type restorations for

attachment of certain space maintaining devices.

6. High caries rate.
7. Following failure of intracoronar restorations.
8. Where predictability is essential, including handicapped or medically compromised patients
9. Young patient with long anticipated service life of the tooth.<sup>2,3,5-8</sup>

*Continued on Page 4...*

## this Issue

1. Preformed Metal Crowns.
2. President's Report.
3. Federal Secretary Manager's Notes
11. ANZSPD Constitution
13. ANZSPD Biennial Conference.  
Notice of General Meeting.
14. Branch News.
18. News from the AAPD.
19. Obituary - Michael Bubb.
20. Coming Events.



## president's report

Dear Members,

Welcome to our last edition of Synopses for this year. Nationally, we have now re elected the Coalition Government and given the lack of any dental policy during the election we can expect very little change in the public dental activities of the Federal Government. On a state level the Victorian enquiry is into the final throws of report making and we await the outcome of their deliberations with great interest. In the general news we have seen the attractive dentition of a leading ballerina generate much attention, the erosive effects of powdered asthma medication achieve notice, to cite only two examples. But dentistry although important to the general public rarely gets a serious look in with government. We do have a very active and productive ADA at federal and state levels and yet dentistry so often seems to be outside looking in. The problem seems to stem from the training paths and institutions that have kept medicine and dentistry divorced. Only with the full integration of dental training, into medicine for both postgraduates and undergraduate will the mind set change and oral health care be seen in its totality, as an important part of the jigsaw of total health for all individuals. It is pleasing to note that there is change in the wind, which augers well for our profession and specialty.

The status of our next Society meeting in Adelaide has been causing the Executive some concern and at the time of press it appears that the meeting will be going ahead in Adelaide although this has not been absolutely confirmed. Our colleagues in South Australia realise the undertaking in organising a Congress. They are presently putting a committee together, who are committed to making the Congress as good as it possibly can be. If the Congress is unable to be go ahead in Adelaide other plans of course will need to be made fairly soon.

My plans for a special meeting in May 1999 between the Academy and the Society to be held in Adelaide are now beginning to take shape. As mentioned in my previous editorial it is planned at this meeting to start developing standards of care for both the Academy and the Society. I believe this is a very important step for our Society and I like forward to the chance to share our meeting with members of the Academy so as to develop the most up to date and appropriate standards of care for Australian Paediatric Dentistry that we can. (See News from the AAPD Page 18).

Of particular interest in the last few weeks has been the letter from the ADC Postgraduate Accreditation Committee under the Chairmanship of Professor Greg Seymour. His letter outlines the committee's intention to accredit postgraduate programs within Australian University Dental Schools which lead to specialist registration. He has requested all interested parties to make submissions. This is a most important move and the Committee will focus on the educational process employed by each University rather than the content of individual programs. With respect to the latter however the Sub-Committee will seek evidence from each University that it has in place a mechanism for evaluation of the content.

### The information age

As I slowly try and evolve myself into a computer literate animal there is one aspect of the process which I would encourage you all to take up. There are dental e-mail discussion groups which are a most interesting forum for discussion and ideas and also provide some interesting information on interesting web sites that colleagues have located around the world. It can of course become totally obsessive once the toe is dipped. However it is very stimulating. Some good contributions are made by practitioners from all around the country in response to various queries. Ozdent is a forum devoted to general dentistry, while anzpaed\_dent is a forum devoted specifically to paediatric dentistry. Ozdent is moderated by Mark Cordato, and you can join this forum at <http://www.onelist.com/community/Ozdent>. The anzpaed\_dent forum is moderated by Angus Cameron, and you can join at [http://www.onelist.com/community/anzpaed\\_dent](http://www.onelist.com/community/anzpaed_dent). The Australasian Academy of Paediatric Dentistry's own sparse web site is located at <http://www.anzapd.org.au/>

I wish you all a very safe end to 1998 and would like to again thank Colgate for their ever generous support of Paediatric Dentistry in Australia and New Zealand, in many different forums but particularly this newsletter.

**Richard Widmer**

### STOP PRESS

The ANZSPD has been awarded the 2005 IAPD Congress. The decision was made at the recent IAPD meeting in London. The 2005 meeting will be held in Sydney probably in February 2005. At the ANZSPD meeting in Adelaide in February we will take the first steps to organise the meeting. All aboard!!!

## federal secretary manager's notes

The Federal Council of the Society met in Melbourne in March of this year (at the time of the International Traumatology meeting).

A number of matters were considered, amongst them the following:

1. It was decided to obtain a perpetual Presidential Plaque. This will list all the Presidents of the Federal ANZSPD and of the New Zealand and Australian Societies of Dentistry for Children which preceded ANZSPD. The Plaque will probably be kept at the offices of the ADA and the NZDA but will travel to the Society Conventions.

2. The "Standards of Care" meeting which was organised by the Australasian Academy of Paediatric Dentistry and subsequently held in Adelaide in May.

All branches of the Society were invited to and did, in fact, send representatives to this meeting. This particular meeting achieved a great deal and it will be very interesting to observe the continuing progress when the Academy meets just prior to the ANZSPD Convention in Adelaide in February 2000.

3. Medicare benefits for Cleft Lip and Palate patients.

The Federal ADA has passed on the handling of this to the Australian Council of Dental Specialists. This Society has written to the Director of Financial Services

of Medicare regarding the limited number of services which are currently covered.

4. The Federal Council agreed to help sponsor the travel of a suitable

### *XII Biennial Conference of ANZSPD to be held in Adelaide, 24th-26th February, 2000*

dentist from Papua New Guinea to the International Association of Paediatric Dentistry Congress in London in September 1999. Dr Ivar Tongia has been chosen to make this trip.

5. A proposal has been put that ANZSPD join with the International Association of Paediatric Dentistry and the British Society of Paediatric Dentistry in having the International Journal of Paediatric Dentistry as their official Journal.

The bottom line of this proposal is that every member of ANZSPD would automatically receive a subscription of this Journal. Of course, this would mean an increase in membership subscription cost for our members. This matter will be discussed further at the Adelaide Convention.

6. The Tasmanian Branch was

readmitted as a member branch of ANZSPD.

7. The Federal Council agreed to amend the By Laws of the Society.

The General Meeting of the Society in Adelaide will need to consider these alterations. The proposed changes are outlined in the meeting notice elsewhere in this edition.

To other matters...

All members will have received the brochure for the XIIth Biennial Conference of ANZSPD to be held in Adelaide, 24th - 26th February 2000. A couple of gremlins were able to sneak into the production of this brochure.

Firstly, we are, in fact, the Australian & New Zealand Society of Paediatric Dentistry. Somehow, the word Dentistry went missing on the front page of the brochure.

Secondly, Associate Professor Martin Tyas is Reader in Dental Materials Science at the University of Melbourne. Our apologies are extended to Dr Tyas for any embarrassment caused by this error.

Jeffrey Wright and the Convention Organising Committee urge you all to take the time to make the trip to Adelaide. Their plan is to put on a memorable Convention - all they need now to guarantee this is a large number of registrations!

**Alistair Devlin**  
**Secretary - Manager**

# preformed metal crowns

...Continued from Page 1

## Tooth preparation

When a stainless steel crown has been selected as the appropriate restoration in the rehabilitation of a primary molar it is essential that a radiograph of the tooth is assessed. Radiographs allow the clinician to assess the extent of physiological root resorption or the presence of pathological root resorption, which may contraindicate restoration of the tooth.

1. **Pain control:** Preparation of the tooth for a stainless steel crown requires profound local anaesthesia as the preparation will extend subgingivally. Both buccal and lingual gingival tissues should be anaesthetised, as tooth preparation, crown insertion, assessing and cleaning crown margins would otherwise create unnecessary discomfort.
2. **Rubber dam placement:** Rubber dam isolation of treated teeth is recommended not only for the safety of the patient, but to create an operative field in which moisture can be adequately controlled.<sup>9</sup> An operator who routinely uses rubber dam will also achieve greater efficiency.
3. **Occlusal reduction:** The occlusal reduction of 1.5mm follows the anatomy of the tooth to allow for lateral excursions of the opposing cusps as well as the thickness of the crown.<sup>10</sup> Because all aspects of the occlusal morphology are reduced

an equal amount, the prepared tooth approximates the original occlusal contour and anatomy of the tooth.<sup>3</sup>

4. **Caries removal:** Caries is removed with a slow speed round cutting burr. This process commences at the peripheral sites, then pulpally to minimise contamination of the pulp chamber should a pulpotomy be required.
5. **Pulp therapy:** Ideally the stainless steel crown should be placed immediately after the pulpotomy is completed to eliminate the need of an interim restoration. An interim restoration is prone to fracture and marginal breakdown with associated loss of coronal seal.<sup>11</sup>
6. **Core build-up:** A core is placed over the zinc oxide eugenol pulp dressing to recreate the outline form of the crown preparation. Light activated resin modified glass ionomer cements are useful materials because of their command set (light activated), fluoride release, marginal seal, and biocompatibility with the tooth and other restorative materials. Cores can also help to prevent ledge type errors during axial reduction and assist in the seating of crowns on extensively broken down teeth.
7. **Axial preparation:** The occlusal reduction improves access to the proximal contact areas. A wooden wedge is placed interproximally to open the mesial and distal contact points of the tooth prior to axial

preparation. The stainless steel crown technique has been modified by many clinicians in the dental literature.

Fieldman, recommends the use of mesial and distal boxes as part of the cavity preparation to improve resistance and retention form of the crown preparation.<sup>8</sup> In an area of the tooth which has minimal dentine thickness, this unproven technique appears to be biologically hazardous and an unnecessary modification to the crown preparation.

Croll, recommends vertical slots around the periphery of the crown coronal to the metal crown margin which serve to add surface area for increased cement-tooth interface.<sup>2</sup> The effectiveness of this technique will be discussed later in this review article.

The axial preparation must relocate the maximal crown diameter to the level of the gingival margin or below to prevent overhang. This necessitates at least some buccal and lingual reduction in addition to the mesial and distal reduction. The final stage of the tooth preparation is the rounding of all sharp line angles formed by the junction of the occlusal with the proximal, buccal, and lingual surface using a lingually inclined bevel. The axial line angles between these surfaces are also rounded.<sup>3,10</sup>

The goals of the stainless steel crown preparation for a primary molar are as follows:

- To eliminate all carious tooth structure in a vital tooth and preserve the pulp.
- To re-establish proper occlusal contacts.
- To re-establish normal mesiodistal coronal dimension for maintenance of arch length and spatial relationships.
- To be free of periodontal disease as a result of emergence profile, embrasure form, proximal contacts or marginal integrity.
- To create a durable restoration with a service life greater than the duration of the deciduous tooth.
- To require a minimum of treatment time and cost.
- To prepare the tooth causing minimal trauma to soft tissues.<sup>2,3</sup>

The original stainless steel crowns of the 1950's were parallel sided "bucket" crowns with limited occlusal anatomy. The Rocky Mountain crowns produced in the 1960's also suffered from a similar poor anatomical form. 3M stainless steel crowns used today are designed to accurately replicate the anatomy of the primary molars. 3M provides both the ion Ni-Chro™ and Unitek™ stainless steel crowns.<sup>12,13</sup> Unitek™ stainless steel crowns were introduced in the 1970's and have a proven successful clinical history. These crowns have shallow occlusal anatomy, are pretrimmed to an optimal length and have parallel walls. The more recent ion Ni-Chro™ crowns are prebelled and have a constricted cervix which is pretrimmed, festooned and precrimped. The crowns are manufactured with a

life-like height, contour and occlusal surface which reduces the amount of adaptation needed when fitting a prefabricated crown. The properties of these crowns allow for a simple tooth preparation, and improvements in retention, occlusion, and periodontal health.<sup>12,13</sup>

## **Stainless steel crown selection**

The appropriate crown size can be

*3M stainless steel crowns used today are designed to accurately replicate the anatomy of the primary molars.*

selected by trial and error or by preoperative measurement with calipers depending on the experience and preference of the operator.

Regardless of the approach, the selected crown should be the smallest one that can be inserted over the crown preparation.<sup>3</sup> Once the appropriate sized crown is selected, the margins must be contoured to the anatomical form of the prepared tooth. When inserting the crown, the resiliency of the nickel-chrome alloy causes the gingival margins to "snap-back" after they pass over the margin of the tooth preparation into the subgingival undercut.<sup>10</sup> The crown should fit snugly and exhibit significant elastic locking to resist displacing forces prior to cementation. Contouring and crimping of the crown margin is accomplished with 3M 800-417 crimping pliers.<sup>3,10</sup> The marginal

integrity of the crown is then assessed with a sickle probe along the entire perimeter of the crown. Before insertion the tooth and crown are washed and dried independently.

The luting agent is then mixed according to the manufacturer's instructions and the crown is half filled completely coating all inside surfaces to prevent trapped air bubbles in the final set.<sup>12</sup> The crown is seated with a lingually biased path of insertion allowing the cement to flow out under pressure. The rubber dam is then removed and the patient asked to bite the crown into occlusion. If the setting is under general anaesthesia the occlusion is checked against the opposing dentition with the marginal ridges of adjacent teeth used as reference for correct placement. The margins are cleaned of excess cement and the interproximal areas are flossed and cleaned thoroughly.

The most common errors in the preparation of stainless steel crowns are:

- Unnecessary over preparation of the tooth which compromises the crown's retention by incomplete utilisation of the cervical undercut.
- The tooth preparation does not have a feather-edge finish line around the entire circumference. Shoulder finish lines ("ledging") prevent complete seating of the stainless steel crown.
- Failure to round all the line angles prevents correct seating of the crown.
- Incorrect crown size selection.<sup>3,10</sup>

*Continued on Page 6...*

# preformed metal crowns

...Continued from Page 5

## Durability of stainless steel crowns

Despite the simplicity and predictability of the stainless steel crown technique, informal surveys reveal that many dentists who treat children seldom use stainless steel crowns for primary molars. Some do not even have a preformed stainless steel crown kit in their surgery.<sup>11</sup> It is therefore not surprising that many carious primary molars are inappropriately treated with amalgam or adhesive dental materials when they could have been far more successfully and predictably managed with the aid of preformed crowns.

Messer and Levering performed a large retrospective study involving 331 stainless steel crowns, placed by dental students on primary molars, followed for up to nine years.<sup>14</sup> The success rate of 88 per cent obtained in this study was similar to an earlier study by Dawson et. al., in 1981.<sup>15</sup> In comparison to Class II amalgams, crowns placed in the younger age group (<4 years) showed a failure rate approximately half that of amalgams for each year up to 10 years of service. This trend is also apparent in the older age group but the failure rate is slightly less than half.<sup>14</sup>

Clearly, the lifespan of multisurface amalgams, composite and glass ionomer restorations is markedly shorter in the primary dentition than in the permanent dentition, however, stainless steel crown restoration of primary teeth offers a practical alternative with far greater success rates.<sup>14-17</sup> In a paired

comparison of stainless steel crowns and multisurface amalgams reporting both lifespan and replacement, Einwag and Dunninger showed over 90 per cent of the stainless steel crowns were successful after 4.5 years, compared to well below 40 per cent for amalgam restorations.<sup>16</sup> The 8 year survival rate of 83-89 per cent for stainless steel crowns is similar to the studies previously discussed.<sup>16</sup> Roberts examined the survival of amalgam and preformed crown restorations placed in primary and permanent molars over a 10 year period placed by a single operator in a specialist paediatric dental practice.<sup>18</sup> This study found the replacement rate for all crowns was 2.8 per cent, compared to 15.3 per cent for primary molar amalgams.<sup>18</sup>

Stainless steel crowns have high success rates, however clinical failures still occur due to loss of the crown, periapical pathology, defective margins or perforation.<sup>19,20</sup> The success of preformed crowns depends upon accurate treatment planning, the quality of the tooth preparation, selection and adjustment of an appropriate crown and the choice of luting agent.<sup>20-23</sup> One reason for crown failure was perforation due to occlusal wear.<sup>18</sup> The experienced operator would regard this as a failure in the technique rather than a limitation of the stainless steel crown *per se*. Croll has described a technique to increase the occlusal thickness of the preformed crown by placing silver solder over the fitting surface on the occlusal aspect.<sup>2</sup>

## Luting materials

Despite careful crimping and contouring of the crown margins the fit remains

imperfect and as a result subgingival plaque develops at the crown-tooth interface.<sup>24,25</sup> The choice of luting cement is therefore critical with stainless steel crown restorations. Breakdown of the marginal seal may result in recurrent caries, pulpitis, or re-infection of previously endodontically treated teeth.<sup>23,26</sup> It is disappointing that very few studies have assessed the luting materials of stainless steel crowns, instead the focus has been towards cast crowns which have different requirements.

The film thickness of cement used in the placement of a cast restoration is 25 to 40 mm compared to that of a stainless steel crown where 1 to 1.5 mm of film thickness is required.<sup>27</sup> To meet this a material must therefore have a high viscosity and high strength.

Microleakage below stainless steel crowns is of particular concern and can be measured by dye penetration or radiopermeability techniques. An *in vitro* study by Berg et. al., assessed the microleakage through stainless steel crowns cemented over primary teeth with polycarboxylate, zinc phosphate and glass ionomer cements by measuring the amount of <sup>45</sup>Ca leakage through the crown margins.<sup>28</sup> The results found all three luting agents to provide inhibition of isotope perfusion.<sup>28</sup>

Although the data suggests that glass ionomer cements do not exhibit greater resistance to microleakage than other cements, there are other advantages that make them an ideal luting agent for the stainless steel crown. The *in vivo* dissolution of glass ionomer cement has



been demonstrated to be superior than polycarboxylate and zinc phosphate cements.<sup>29</sup> Also, fluoride release from glass ionomer cements can reduce caries at restoration margins<sup>30</sup>. The ambient level of fluoride ions in saliva is approximately 0.08ppm which is sufficient only to maintain stasis of enamel where there is no undue stress. The level of fluoride ions in the region of a glass ionomer cement is approximately 10 ppm. There appears to be a "halo" effect surrounding the cement where remineralisation of enamel and dentine has been observed.<sup>31</sup> Glass ionomer cements also exhibit high compressive strengths in thick films and form a strong ionic bond at both the tooth and crown interface.<sup>31</sup>

An in vitro study by Shiflett assessing microleakage of stainless steel crowns on primary anterior teeth is summarised in table 1. Materials used in the study include dentin bonding agent (DBA),

the nonadhesive materials, however, because of the small sample size, differences within the adhesive group were not statistically significant. The choice of luting agent should therefore involve assessment of other properties such as:

1. Compressive and tensile strengths
2. Solubility
3. Fluoride release
4. Handling properties: Working time and setting time
5. Pulpal and periodontal response
6. Abrasion resistance (in case of perforation)
7. Bond strength to enamel, dentine and crown alloy

tooth interface.<sup>2</sup> If using a glass ionomer cement as a luting agent which has a high adhesive strength this would also appear unnecessary. When stainless steel crowns luted with glass ionomer cement are displaced from the prepared tooth an adhesive failure at the cement-crown interface occurs.<sup>32</sup> This is demonstrated by the cement adhering entirely to the tooth with none left adhering to the crown macroscopically. Scoring the fitting surface of a stainless steel crown with a diamond bur prior to cementation would therefore seem a more effective procedure.<sup>33</sup> The key to retentive crowns however, lies with the operator and his/her ability to carry out a successful crown preparation.

## Periodontal response

With respect to periodontal response of stainless steel crowns, three significant areas require assessment. These are:

1. the tooth itself,
2. the adjacent permanent tooth (if present) and
3. the permanent successor.

The periodontal response to stainless steel crowns on primary molars is relatively benign despite imperfect margins. Recent studies have shown plaque adherence on stainless steel crowns to be less than adjacent teeth, however clinically undetectable subgingival plaque may be the cause of any gingivitis in these individuals.<sup>35,36</sup>

Myers found that rough crown margins enhanced subgingival plaque accumulation and resulted in gingival inflammation.<sup>25</sup> The frequency of gingivitis was related to the accuracy of

| MATERIAL  | MEAN<br>(microleakage, $\mu\text{m}$ ) | STANDARD ERROR<br>( $\mu\text{m}$ ) |
|---|--|-------------------------------------|
| Resin-modified glass ionomer (RMGI) plus Denytine bonding agent (DBA) | 217.2                                  | 17.8                                |
| Resin-modified glass ionomer (RMGI)                                   | 276.3                                  | 35.0                                |
| Adhesive composite resin (ACR)  | 335.8                                  | 39.9                                |
| Glass ionomer cement (GI)   | 416.6                                  | 45.9                                |
| Zinc phosphate cement (ZP)  | 853.7                                  | 92.8                                |
| Polycarboxylate cement (PC)   | 1113.6                                 | 156.0                               |
| Zinc oxide eugenol (ZOE)  | 1221.1                                 | 143.1                               |

resin-modified glass-ionomer (RGI), adhesive composite resin cement (ACR), glass ionomer cement (GI), zinc phosphate cement (ZP), polycarboxylate cement (PC), and zinc oxide eugenol cement (ZOE).<sup>23</sup>

All adhesive materials significantly reduced microleakage compared with

8. Radiographic appearance (radiopaque)

9. Cost and shelf life.

Croll recommends vertical slots around the periphery of the crown coronal to the metal crown margin which serve to add surface area for increased cement-

*Continued on Page 8...*

# preformed metal crowns

...Continued from Page 7

the crown fabrication, contour and cementation. Even when the crowns were considered satisfactory, inflammation was evident in 24 per cent of cases.<sup>25</sup>

Other studies have demonstrated only minimal gingival inflammation as a result of imperfect stainless steel crown contour and margins.<sup>24,37</sup> Poor adaptation, retained cement in the gingival crevice and poor oral hygiene however increased gingival inflammation associated with the stainless steel crown.<sup>25,38</sup>

Checchio quantitatively measured gingival crevicular fluid flow with a periotron around 50 primary posterior teeth with preformed crowns and 50 control teeth on the contralateral side of the arch.<sup>39</sup> The crevicular fluid flow was greatest in individuals with poor oral hygiene despite the quality of the stainless steel crown restoration. Improperly contoured restorations were associated with more severe gingival inflammation, however, it is the level of plaque control that appears to be the most important factor in the presence of gingivitis associated with stainless steel crowns.<sup>39</sup> Accurate marginal adaptation is more difficult on first permanent molars for a number of reasons:

1. The first permanent molars have a smaller cervical bulge and therefore crimping and contouring of the gingival margins is more difficult.
2. The first permanent molar crown has a longer approximal depth than

primary molar crowns. This site is difficult to examine and clean and therefore of critical importance.

3. Greater variation in crown size and morphology results in a less intimate fit of the preformed crown for first permanent molars.<sup>36</sup>

*The Whiter Biter veneered crown is significantly better able to resist a shearing force on the veneer than the other crowns tested.*

Einwag demonstrated a sudden increase in sulcular depth surrounding the mesial and distal surfaces of the first permanent molars after the age of 15. To avoid alveolar bone loss, stainless steel crowns should be replaced by more accurately fitting cast crowns soon after this age.<sup>36</sup>

Fuks et. al., assessed the gingival health of 97 premolars whose primary predecessors had been restored by preformed stainless steel crowns.<sup>40</sup> The gingival health around permanent successors in this study was no different from that of other permanent teeth in the mouth.<sup>40</sup> This would suggest that gingivitis present around stainless steel crowns resolved with exfoliation and subsequent eruption of the permanent teeth.<sup>40</sup>

The presence of a well adapted stainless steel crown on a second primary molar appears to have no affect on the

periodontal health of the adjacent first molar.<sup>41</sup> Guelmann examined 36 children with stainless steel crowns on a second primary molar on one side of the mouth only, the contralateral tooth acting as a control.<sup>41</sup> No statistically significant differences in plaque index scores, gingival index scores, probing depth or alveolar bone levels were noted between the mesial surface of first permanent molars and the contralateral control.<sup>41</sup>

## Areas of further research

Despite the long and successful history of stainless steel crowns, it is surprising the number of areas which have been neglected of research. A detailed study of luting agents assessing the areas of microleakage, compressive strength, biocompatibility, antibacterial properties, solubility and fluoride release may be the first study reported. Periodontal studies would also be of value in older children in relation to the age of onset of periodontitis associated with stainless steel crowns. It seems the major limitations of the stainless steel crown is that of aesthetics. Many attempts have been made to improve the aesthetics of the stainless steel crown with limited success. Croll has described a technique in which a facade of enamel-dentine bonded composite resin can be inserted to eliminate the silver metal appearance of the steel crown.<sup>2,4</sup> A window through the metal is cut with a water-cooled carbide burr. Small mechanical retentive areas are created with a small round burr in the enamel and dentine to increase the surface area



for etching and bonding. After sufficient cement is removed, the tooth is acid etched for 60 seconds, washed, and dried prior to the placement of dentine-enamel bonding agent and light-cured composite resin.<sup>2,4</sup>

Wiedenfeld describes a technique for aesthetically veneering anterior stainless steel crowns with composite resin in an attempt to improve the open-faced stainless steel crowns.<sup>42</sup> The buccal surface of the crown is sandblasted with 50-micron aluminum oxide for two to four seconds. A composite resin cement is then applied to the sandblasted surface followed by an opaque light-cured pit-and-fissure sealant which is cured for 20 seconds. Finally a composite resin veneer is placed to a thickness of approximately one mm and light cured for 40 seconds. The composites are polished and tried in before being cemented in the customary manner.<sup>42</sup>

Four companies have recently marketed stainless steel crown forms with prebonded resin veneer facings (Cheng Crowns, Peter Cheng Orthodontic Laboratory; Kinder Crowns, Mayclin Dental Studio; NuSmile Primary Crowns, O.T, Inc; Whiter Biter Crown II, White Bite, Inc). A recent study by Waggoner and Cohen assessed the shear force necessary to cause veneer failures, results showed the Whiter Biter veneered crown significantly better able to resist a shearing force on the veneer than the other crowns tested.<sup>43</sup>

This led to an important discovery regarding both the materials and the attachment mechanism. The Cheng, NuSmile, and Kinder crowns all utilize a composite resin or a dimethacrylate resin for their facing material. The Whiter Biter crowns utilize a different, more flexible thermoplastic material, this plasticity possibly accounting for much of the difference in the results. The method

of attachment of the veneers to the stainless steel also differed between the crowns. The Cheng and Whiter Biter crowns were attached primarily to the metal via a meshwork welded to the surface, the NuSmile and Kinder crowns were bonded directly to the stainless steel.<sup>43</sup>

## Conclusion

This paper describes the tooth preparation and reviews the literature of the stainless steel crown. This procedure enables the dentist to deliver an economical, successful and predictable restoration for the carious primary molar. Stainless steel crowns can often be fitted with less time than would be required for a conventional multi-surface restoration, with the advantage of long-term predictability.

## References

1. Humphrey WP. Uses of chrome steel in children's dentistry. *Dent Surv* 1950;26:945-9.
2. Croll TP, Riesenberger RE. Primary molar stainless steel crown restoration. *Paed Dent* 1986;4:221-6.
3. Full CA, Walker JD, Pinkham JR. Stainless steel crowns for deciduous molars. *JADA* 1974;89:360-4.
4. Croll TP. Primary canine full coronal restoration: new considerations. *Quint Int* 1985;2:143-7.
5. Rakocz M, Keating J, Johnson R. Management of the primary dentition in vitamin D-resistant rickets. *Oral Surg* 1982;2:166-71.
6. Breen G. Prophylactic dental treatment for a patient with vitamin D-resistant rickets: Report of case. *J Dent Child* 1986;1:38-43.

7. McDonald RE, Avery DR. *Dentistry for the child and adolescent*. 5<sup>th</sup> ed. St Louis: Mosby, 1988.
8. Fieldman BS, Cohen MM. A simple efficient method for utilizing stainless steel crown. *J Dent Child* 1979;6:34-7.
9. Croll T. Bonded composite resin crowns for primary incisors: technique update. *Quint Int* 1990;2:153-7.
10. Allen K. Restoration of extensively carious primary molar. *ADJ* 1971;1:8-12.
11. Croll TP, Killian CM. Zinc oxide-eugenol pulpotomy and stainless steel crown restoration of a primary molar. *Quint Int* 1992;6:383-8.
12. 3M Prefabricated Crowns User Guide. Printed in USA 1996.
13. 3M Ion and Unitek Prefabricated Crown Products, Second Edition.
14. Messer LB, Levering NJ. The durability of primary molar restorations: II. Observations and predictions of success of stainless steel crowns. *Paed Dent* 1988;2:81-5.
15. Dawson LR, Simon JE, Taylor PP. Use of amalgam and stainless steel restorations for primary molars. *J Dent Child* 1981;48:420-2.
16. Einwag J, Dunninger P. Stainless steel crown versus multisurface amalgam restorations: An 8-year longitudinal study. *Quint Int* 1996;5:321-3.
17. Papathanasiou AG, Curzon MEJ, Fairpo CG. influence of restorative material on survival rate of restorations in primary molars. *Paed Dent* 1994;4:282-8.

*Continued on Page 10...*

# preformed metal crowns

...Continued from Page 9

18. Roberts JF, Sherriff M. The fate and survival of amalgam and preformed crown molar restorations placed in a specialist paediatric dental practice. *Br Dent J* 1990;8:237-44.
19. Savide NL, Caputo AA, Luke LS. The effect of tooth preparation on the restoration of stainless steel crowns. *J Dent Child* 1979;46:385-9.
20. Noffsinger DP, Jedrychowski JR, Caputo AA: Effect of polycarboxylate and glass ionomer cements on stainless steel crown retention. *Paed Dent* 1983;5:68-71.
21. Spedding RH. Two principles for improving the adaptation of stainless steel crowns to primary molars. *Dent Clin North Am* 1984;28:157-75.
22. Rector JA, Mitchell RJ, Spedding RH. The influence of tooth preparation and crown manipulation on the mechanical retention of stainless steel crowns. *J Dent Child* 1985;52:422-7.
23. Shiflett K, White SN. Microleakage of cements for stainless steel crowns. *Paed Dent* 1997;4:262-6.
24. Henderson HZ. Evaluation of the preformed stainless steel crown. *J Dent Child* 1973; 40:353-8.
25. Myers DR. A clinical study of the response of the gingival tissues surrounding stainless steel crowns. *J Dent Child* 1975;42:281-4.
26. Swanson K, Madison S. An evaluation of coronal microleakage in endodontically treated teeth. Part 1. Time periods. *J Endod* 1987; 13:56-9.
27. Shillingburg HT, Hobo S, Whitsett LD. *Fundamentals of Fixed Prosthodontics* Second Edition. Chicago: Quintessence books, 1981.
28. Berg JH, Pettet DE, Hutchins MO. Microleakage of three luting agents used with stainless steel crowns. *Paed Dent* 1988;10:195-8.
29. Phillips RW, Swartz ML, Lund MS, Moore BK, Vickery J. In vivo disintegration of luting cements. *J Am Dent Assoc* 1987;114:489-92.
30. Hicks MJ, Flaitz CM, Silverstone LM. Secondary caries formation in vitro around glass ionomer restorations. *Quintessence* 1986;17:527-32.
31. Forsten L. Fluoride release of glass ionomers. Hunt P editor. *Glass ionomers; next generation*. Philadelphia, 1965:241
32. Noffsinger DP, Jedrychowski JR, Caputo AA. Effect of polycarboxylate and glass ionomer cement on stainless steel crown retention. *Paed Dent* 1983;5:68-71.
33. Beemer RL, Ferracane JL, Howard HE. Orthodontic band retention on primary molar stainless steel crowns. *Paed Dent* 1993;15:408-13.
34. Marcum JS. The effect of crown marginal depth upon gingival tissue. *J Pros Dent* 1967;17:479-87.
35. Durr DP, Ashrafi MH, Duncan WK. Study of plaque accumulation and gingival health surrounding stainless steel crowns. *J Dent Child* 1982;49:343-6.
36. Einwag J. Effect of entirely preformed stainless steel crowns on periodontal health in primary, mixed dentitions. *J Dent Child* 1984;51:356-9.
37. Webber DL. Gingival health following placement of stainless steel crowns. *J Dent Child* 1974;41:186-9.
38. Zyskind K. Periodontal health as related to preformed crowns: Report of case. *J Dent Child* 1989;56:385-7.
39. Checchio LM, Gaskill WF, Carrel R. The relationship between periodontal disease and stainless steel crowns. *J Dent Child* 1983;50:205-9.
40. Fuks AB, Zadok S, Chosack A. Gingival health of premolar successors to crowned primary molars. *Paed Dent* 1983;5:51-2.
41. Guelman M, Matsson L, Bimstein E. Periodontal health at first permanent molars adjacent to primary molar stainless steel crowns. *J Clin Perio* 1988;15:531-3.
42. Wiedenfeld KR, Draughn RA, Welford JB. An aesthetic technique for veneering anterior stainless steel crowns with composite resin. *J Dent Child* 1994;61:321-6.
43. Waggoner WF, Cohen H. Failure strength of four veneered primary stainless steel crowns. *Paed Dent* 1995;17:36-40.

# anzspd constitution

## Article 1: *Name*

The name of the organisation shall be "THE AUSTRALIAN AND NEW ZEALAND SOCIETY OF PAEDIATRIC DENTISTRY", hereinafter referred to as "THE SOCIETY".

## Article 2: *Objects*

The objects of the Society shall be the study and advancement of paediatric dentistry, and the promotion of education in the field of paediatric dentistry.

## Article 3: *Affiliation and Recognition*

The Society may seek affiliation on mutually acceptable terms and conditions with any other Society or association with similar aims and objects.

## Article 4: *Membership*

Membership of the Society shall consist of dentists and other persons whose qualifications meet the requirements as set out in Chapter 1 of the Bylaws.

## Article 5: *Fees*

The amount of annual subscription shall be decided at the general meeting of the Society.

## Article 6: *Administration*

The Society shall be administered by a Council as provided in Chapter 2 of the Bylaws.

## Article 7: *Non-profit*

The assets and income of the Society shall be applied solely in furtherance of the above mentioned objects and no portion shall be distributed directly or indirectly to the members of the Society except as bona fide compensation for services rendered or expenses incurred on behalf of the Society.

## Article 8: *Meetings*

- a) A General Meeting of the Society shall be held at the same time and place as the Society's Convention. Twenty one days' notice in writing of a General Meeting shall be given to all members.
- b) Special Meetings-the Council may at any time summon a special meeting of the Society. Fourteen days notice in writing shall be given to all members of such a meeting, setting out the reason for the meeting.
- c) All meetings shall be chaired by the President, Vice-President or a member of the Council of the Society.
- d) A quorum for a Special or General Meeting shall be ten members.

## Article 9: *Amendments*

The constitution may be amended by a two-thirds majority of the members present at a General or Special Meeting, provided notice of such amendments is given to all members twenty one days before the meeting.

## Article 10: *Dissolution*

If, upon winding up or dissolution of the organisation, there remains, after satisfaction of all its debts and liabilities, any property whatsoever, the same shall not be paid to or distributed among the members but shall be given or transferred to some other institution or Society with similar objects, provided such institution or Society is itself a non-profit organisation.

## By-laws

### Chapter 1: *Membership*

#### SECTION 1: *Types of membership*

1. Full membership. Any dentist registered in Australia or New Zealand who shows proof of interest in the objects of the Society, shall be eligible for election as a full member of the Society. Such person must be of good repute and professional standing, and a current member of the Australian Dental Association Incorporated or the New Zealand Dental Association Incorporated.
2. Honorary membership. On the recommendation of the Council, any person:
  - a) who is not eligible for full membership, but who wishes to contribute to the objects of the Society and whose special knowledge in the opinion of the Council would benefit the Society

*Continued on Page 12...*

# anzspd constitution

...Continued from Page 11

or **b)** who is eligible for election to full membership, but has either retired from active practice or has reached the age of 65 years, shall be eligible for election as an honorary member of the Society.

## SECTION 2: Election of members

1. Election of members may be carried out in either of the following ways:

**a)** A member of an existing branch of the Australian and New Zealand Society of Paediatric Dentistry shall become a member of the Society on payment of the federal fee to his/her local branch, provided the local branch endorses his/her nomination and sends the required fee to the Federal Secretary/Manager

or **b)** Nominations for membership of the Society shall be proposed by an existing member of the Society at a General or Special Meeting for consideration at that meeting. If this nomination is acceptable by a two-thirds or more majority vote of members present, written application for membership by the nominee, together with his/her annual subscription must be in the hands of the Federal Secretary/Manager within fourteen days after that meeting.

2. On the satisfaction of these requirements, the Council shall then enter the name of the nominee under the appropriate class of membership.

## SECTION 3: Cessation of Membership

A member of the Society shall cease to be a member if he/she:

**a)** sends the Federal Secretary/Manager written notice of his/her resignation and pays any outstanding accounts.

**b)** is three months or more in arrears in the payment of his/her annual subscription or other dues, and, in the opinion of the Council, should have his/her name removed from membership of the Society.

(Loss of membership shall not absolve the member from liability for overdue subscription or other dues).

## Chapter 2: Administration

### SECTION 1:

1. The Council of the Society shall consist of one Councillor for each provincial branch of the Society, a Secretary/Manager who need not be an elected provincial Councillor, plus the immediate past president *ex officio*.

2. The officers of the Society shall be:

(i) President

(ii) Vice-President

(iii) Honorary Secretary/Manager.

The officers shall be elected by Council from its members (see 3. below) with the exception of the Secretary/Manager who need not be a provincial Councillor. If the Secretary/Manager is not a provincial Councillor, he/she will be ineligible to vote at Council meetings.

3. A meeting of Council to elect the officers shall precede the General Meeting. Those elected will hold office for the ensuing period until the next Convention of the Society.

4.1. The President will hold office for one period but will not be eligible for immediate re-election.

4.2. The Vice-President will hold office for one period, and will be eligible for re-election.

4.3. The Honorary Secretary/Manager will hold office for one period and will be eligible for re-election.

5. The names of those elected by the provincial branches to serve as Councillors shall be forwarded to reach the Secretary/Manager fourteen days before the date set for the General Meeting.

6. If a Councillor is unable to attend a Council meeting, he/she may vote by proxy.

### SECTION 2:

The Council shall act as co-ordinator of the individual provincial bodies who will

nevertheless retain autonomy, and the Council shall have control over the management and affairs of the Society, including the collection and dispersion of the federal funds of the Society.

## SECTION 3:

The Council shall meet at least annually, and shall review and co-ordinate the programmes put forward by the various member provincial branches regarding the furtherance of the objects of the Society.

## SECTION 4: Delegation by Council

The Council may delegate responsibilities to an executive of not less than three members to deal with urgent business arising between meetings. All decisions of the executive will be subject to ratification by Council at its next regular meeting.

## SECTION 5: Meetings

The Society shall hold a "Convention" usually at intervals of not less than two years but not greater than three years. Such Conventions will be conducted by the provincial branches, in turn, on behalf of the Federal Society. The provincial branch conducting the Convention and the Federal Society will share equally any profit or loss from the Convention.

## NOTE:

In the event of inability of the President to continue to hold office due to death, serious ill health or other emergency, the Council may recall a past President to preside until the next regular General Meeting.

As amended, August 1997; with addition to By Law

## 12<sup>th</sup> ANZSPD BIENNIAL CONFERENCE dentistry for our children's future

24<sup>th</sup>-25<sup>th</sup> February 2000 Hyatt-Regency Adelaide

Preparation for the Conference in February 2000 is well under way. Please register early and take advantage of the discounts offered for "early bird" registration. As the conference is on at the same time as the Fringe Festival it would be wise to book your accommodation early as well.

The lecture program is topical and members will find there will be many "take home" messages. As usual, the postgraduate competition will be a feature, presenting research being done in the field of Paediatric Dentistry by current and recently completed postgraduate students from around Australia.

The social side of the conference will be great. The Fringe festival, a part

of The Adelaide Festival of Arts will be under way during the time of the conference, so there will be plenty of activity in the city day and night.

You'll also be able to take advantage of the excellent al fresco dining available in Adelaide, as the weather will be at its best in late February. The conference dinner is at Ayres House and as there are limited seats available make sure you tick this option on your registration form.

We are looking forward to seeing a lot of our interstate colleagues in Adelaide for the conference and promise you it will be one you won't forget in a hurry.

**Conference Committee**

## notice of general meeting

The General Meeting of the Australian & New Zealand Society of Paediatric Dentistry will be held at 3:45pm on Saturday 26th February 2000 at the Hyatt-Regency Hotel, North Terrace, Adelaide.

The meeting will be asked to consider, as well as the usual business of the General Meeting, an addition to the By Laws of the Society.

The Federal Council decided in March 1998 to add to the existing By Law Chapter 2, Section 5: Meetings:

After "*The society shall hold a 'Convention' at intervals of not less than two years and not greater than three years*"

The following: "*Such Conventions will be conducted by the provincial branches, in turn, on behalf of the federal society.*"

*The provincial branch conducting the Convention and the federal society will share equally any profit or loss from the Convention.*"

## New South Wales

There are approximately 54 active members of the Society for 1999. The executive consists of:

President: Joanna Seppelt  
Secretary: Eduardo Alcaino  
Treasurer: Chihn Nguyen

We hold three regular meetings a year at the Duxton Hotel in Milsons Point. The three meetings for the year can be summarised as follows:

### Tuesday 11<sup>th</sup> May

This meeting discussed "The use of sedation and general anaesthesia in Paediatric Dentistry". Both Senior Registrars at Westmead Hospital presented papers on this occasion. Dr Richard Balmer on the use of general anaesthesia, and Dr Kay Hood in the use of oral sedation. 46 members/guests attended on the night. Richard Widmer advised re sponsorship for a PNG dentist to attend the next IAPD Congress in London. Members were also informed about the Standards of Care meeting that took place in Adelaide in February this year.

### Tuesday 17<sup>th</sup> August

The topic of the meeting was "Child Restraint in Dental Practice: A medico-legal point of view". The main speakers were: Dr Sloane Madden, a fellow in the Department of Psychological Medicine at the New Children's Hospital-Westmead, and Mr Andrew Took, a Senior Solicitor with United Medical Protection. This was an extremely well received talk by all members/guests and generated many questions on the night. A total of 45 people attended this meeting.

Other topics discussed on the night were:

Firstly, the possibility of helping the University of Sydney fund an exchange program between this University and The Harvard School of Dental Medicine. This venture is being organised by The Faculty of Dentistry, through Dr Ward Massey BDS PhD, Senior Lecturer in Tooth Conservation.

Secondly, Richard Widmer explained the possibility for our members to receive the IJPD at a subsidised price of \$22.00 Pounds per year for a quarterly issue. Thirdly, the meetings of the ANZSPD (QLD Branch) in November 1999 and the Adelaide Conference in February 2000 were advertised. A request to encourage members to publish case reports or papers in the upcoming issues of Synopses was also addressed.

Lastly, a special invitation was extended to Dr Keith Hunter, a VDO with the Children's Hospital in Camperdown and Westmead (NCH) for the last 17 years. Keith recently retired from his position at the NCH in June 1999. A special thanks was expressed to Keith for his many years of devoted service to his patients and Paediatric Dentistry.

### November Meeting

This meeting will discuss "Prosthodontic needs of Children". Once again we have invited two speakers to discuss the topic with special consideration for those patients with missing teeth. A Prosthodontist from Melbourne, Dr Anthony Dickinson and an Orthodontist from Bendigo (VIC), Dr Tissa Jayasekera will debate the topic from their respective angles. This is the last meeting for the year 1999.

**Eduardo A. Alcaino**  
**Hon Secretary ANZSPD (NSW Branch)**

## New Zealand

It is a year since I became president of our local branch. With such a small number of members distributed throughout the country, I find that we focus on our day to day work and time passes quickly. However, one of our members, Mary-Ann Costello recently spoke as a representative of our society at a combined societies meeting in Wairaki. My understanding is that her lectures were very well received.

A half-day course will be conducted by Professor Timothy Wright, who is the visiting Colgate Fellow for this year, in both Christchurch and Auckland in November. The title of his talk will be Dental Caries Management, Mythology or Science. Professor Wright will be visiting the School of Dentistry in Dunedin during November and has kindly offered to travel to Christchurch and Auckland to present these half-day courses.

A telephone conference meeting of our local committee is planned for the 5th October. We have many issues facing children's oral health in New Zealand. To become involved with all of these would be a very daunting task. I believe our committee needs to address the issue of what can be successfully achieved within the limits of the small membership and our limited resources in both time and money. In reality, I imagine it would be most productive for us to choose one or two important topics and focus on these alone. Hopefully, our meeting will be able to consider the direction we should take in the next year or so.

At an administrative level, Mary Livingston as Secretary/Treasurer and I have at last, managed to change signatories on our Branch's bank



account from the previous members of the executive to us. In recent years, the New Zealand banking system has been streamlined for efficiency. I do wonder if this streamlining has involved the laying off of staff who have had expertise in the banking system and replacing them with inexperienced workers who have little knowledge about how the system works.

The incorporation of our Branch of the society should be completed within the next month or so. We need three or four more signatures on the incorporation document before we pass it to The Department of Commerce. This will be the final task to complete the process.

I am sure some of our members will attend the Adelaide conference. I am certainly looking forward to it.

**Ian Esson**  
**President. NZ Branch ANZSPD**

## Queensland

This year has been busy again for the Queensland branch with our President Professor Kim Seow being instrumental in organising many activities, guest speakers and also vital sponsorship for our branch. Our meetings this year have been held at the Hotel Grand Chancellor. The format for the meetings once again included dinner, generously sponsored by Oral B and Meredith McMaster, and this has been enthusiastically supported by members with excellent attendances.

At the first meeting in February, Dr Alex Forrest, Forensic Dentist, spoke to us about computer imaging for identification purposes. Dr Paul Monsour spoke to us at the April meeting on dental radiography and imaging techniques. At the June meeting the guest speaker

was Professor Laurie Walsh on high-tech diagnosis and treatment of dental caries. Dr John Keys was nominated as our representative at the Australian Academy of Paediatric Dentistry meeting held in Adelaide in May, and Dr Laurie Bourke attended the Federal meeting in March.

The highlight for the year will be the Annual Clinic Day. This is to be held at the Marriott Hotel at Surfers Paradise on November 13th and 14th and Professor Kim Seow has organised an excellent panel of speakers and sponsorship by Colgate. These include Dr Tim Wright from the University of North Carolina, Dr Nicky Kilpatrick from the Royal Children's Hospital in Melbourne, Dr Richard Widmer from Westmead in Sydney, and Dr Peter Gregory, Private Practice in Perth. Topics to be covered include current restorative strategies for children, behaviour management, clinical oral pathology, and paediatric dental trauma. The conference dinner will feature a boat cruise through the scenic waterways of Surfers Paradise and a Queensland seafood feast. The high calibre of the program has been made possible by Colgate sponsorship, for which members are most grateful.

Members are looking forward to this and the oncoming year as the new executive takes over for 2000, with the election of new office bearers at the AGM. This will be held in conjunction with the Annual Clinic Day. Overall, 1999 has been another successful year for the Queensland branch with membership increasing, an enlightening scientific program and most enjoyable social activities as dentists share their common interest in Paediatric Dentistry.

**Dr Vivienne Linnett**  
**Secretary /Treasurer**  
**Qld Branch ANZSPD**

## South Australia

To date the SA branch has had a good year with two well attended meetings thus far. In March we invited Prof. Zimmer from The Flinders University Centre for perinatal Medicine to talk to us on Infant growth and Development and the role of oils in the diet. This proved to be a very interesting talk as she discussed a wide variety of factors that effect infant growth and development. The main focus of the talk was on the important role of breast milk in promoting healthy growth in infants. Prof Zimmer then discussed the research into formulation of breast milk substitutes and the pros and cons of various formulas available on the market. The talk then digressed to the importance of oils and fats in the adult diet.

The next meeting of the society was in June with a Speech Pathologist, Coralee Sheldon, talking to us about the interaction of speech pathology and dentistry. Coralee outlined the development of speech and the appropriate time to refer for speech pathology. A discussion on dribbling and open bites as well as thumb sucking, tongue thrusting and lisps was very informative.

The main news from the branch is, of course, the conference in 2000. Preparations are well under way. Registration forms have now gone out and early registration is advised to take advantage of the early bird discounts. The conference is on at the same time as the Fringe Festival, so it would be wise to book your accommodation early. The lecture program is topical and we believe there will be many useful take home messages. As usual the post

*Continued on Page 16...*

*...Continued from Page 15*

graduate presentations will be a feature of the program, presenting research being done around Australia in the field of Paediatric Dentistry. I would like to take this opportunity to remind postgraduate students that if they are entering the competition the Federal Branch of ANZSPD will pay their registration fee.

The social side of the conference is going to be great. With the Fringe Festival getting under way at the time of the conference there will be plenty of free entertainment and activities around the city. The conference dinner is being held at one of the best restaurants in Adelaide. Come and sample the intellectual and culinary delights of the 12<sup>th</sup> Biennial Conference of The ANZSPD in Adelaide, 25th-26th February 2000, we look forward to seeing you there.

## Tasmania

**The rebirth of a branch:** Tasmanian Branch of the ANZSPD was founded in Launceston on 19th September 1998. We were honoured to have two international speakers, Dr R Hall and Prof K Storhaug, attend a seminar in Launceston, Tasmania. The overwhelming response of attendees was to immediately reconvene a branch of the society in Tasmania. The core executive were elected and left to it. There is much to be said for the power of a good seminar!

The following office bearers were elected:

President: Ashwani Gupta  
Vice-President: Tasha Dodd  
Secretary/Treasurer: Mala Anthony

Many months and several letters later, Wayne Ottaway, Alistair Devlin and Richard Widmer enabled us to begin a rudimentary form of the society. Alas,

we were struggling to attract the member numbers of other states and were foundering before we even set sail. Tasmania has a very small dental community and most are members of several societies – and here was yet another! It was decided after much discussion to encourage the entry of Dental Therapists – a source of enthusiastic and keen minds already focused upon the task at hand.

Dr Gupta convened a general meeting on 5th December 1998. The main item for consideration was the amendment of the constitution, for the inclusion of dental therapists as non-voting, associate members. This was discussed and accepted.

The society started with 18 enthusiastic, foundation members. We aimed to create a stronger bond between the public and private sectors and to encourage the free-flow of up-to-date information on paediatric care within the state. This has been a tremendous success and boosted our tiny membership to 32.

Our major success story has been the recent inaugural branch scientific program featuring Richard Widmer and James Lucas on 26th June 1999, at Wrest Point Casino. Thirty two participants benefited from lectures ranging from Behaviour Management to Recent Advances in Materials used in Paediatric Dentistry. The event went like a well-oiled handpiece and concluded the first year of our rebirth.

The annual general meeting was held straight after. Dr Paul Crowe passed the motion to reinstate the present executive for another year. The motion seconded by Dr Wayne Ottaway. Our membership now stands at 30. The branch anticipates another busy year. Currently we are on a membership drive

and planning the next education program.

We have much to learn and we are willing to accept any advice in the pursuit of a healthy and productive branch. Thanks to all those who sent us support – we hope to have you visit our friendly isle.

**Mala Anthony**

## Victoria

A Vintage Crop (1993) of members of the Victorian Branch and their guests celebrated the end of the 1998 with a night of Hi Jinx (1960) on the Members' Lawn at Flemington Racecourse – the course where the Melbourne Cup Ar-won (1978). As the night progressed and the temperature turned Subzero (1992), the members and guests decided to ad'Jeune (1994) to the Members' Champagne Bar, Just a Dash (1981) from the Members' Lawn. (Apologies to the many great horses that have won the Melbourne Cup!)

A stimulating series of dinner meetings has followed in 1999. Dr Pam Craig gave us a wonderful insight into one child's life in ancient Egypt in "Paediatric Dentistry – Nile Style". Her report of her forensic examination of a paediatric mummy proved to be popular with members.

Pam's co-lecturer for the evening was Dr David Nash, orthodontist, who presented a series of cases in the primary, early mixed and late dentitions to demonstrate early orthodontic intervention therapies.

In April, Dr. George Patton, Director of Adolescent Health at the Royal Children's Hospital presented "Eating Disorders". Surprisingly, anorexia and bulimia have long histories and are not just diseases of the late 20<sup>th</sup> century.

"Teething- Myths and Measurements" was well-attended by a large number of members as well as dental auxiliaries in June. Presenting their research about this controversial topic were Dr Melissa Wake, Paediatrician, and Dr Jamie Lucas.

Perhaps the highlight of the lecture series to date was the comprehensive lecture on oral sedation given by Dr Lindy Cass, paediatric anaesthetist. Her presentation style and handout were well received by those who attended! As usual, the principal lectures have been supported by the paediatric dental post-graduates with their case presentations. Our thanks go out to them for their efforts and excellent lectures.

Ms. Joyce Alley, Speech Pathologist, will be the final lecturer for the year. With years of experience at the Royal Children's Hospital, she will make an invaluable contribution to our program.

Soon it will be time to kick-up our heels again with the End of Year Function. Members and their guests will be racing to Sandringham for another joyous celebration at the home of Pam Dalglish. Always a good night at Pam and Stuart's, the party will be a winner. See you there!

**John Sheahan**  
**Branch Secretary**

## Western Australia

A large contingent of WA members travelled to the International Traumatology meeting in Melbourne, 19 - 21 March. They were rewarded with a superb meeting. The organisers succeeded in putting together a program of truly international quality and the unanimous view of the visitors was that all had derived considerable benefit from the material presented.

The WA Branch decided on a new approach to the annual mid-winter meeting this year. For the past twelve years, this meeting has been held at various centres in the south-west of the state - Margaret River, Pemberton, Busselton, and for the last few years, at the picturesque Caves House at Yallingup. This year, the meeting was held at "Merribrook", an adventure and development training establishment at Cowaramup, near Margaret River in July.



Alistair Devlin, Federal Secretary/Manager, about to abseil over the Willyabrup Cliffs at the mid-winter meeting.

A small but dedicated bunch of members and a few partners spent the first afternoon doing battle with a very challenging high ropes course. A range of different activities were included, with the ultimate being the so-called "pamper pole". This is a single pole, the size of a standard lamp pole with a platform the size of an A4 page at the top. Participants willing to try this one were required to climb to the top of this swaying pole, get onto the platform and then jump across a couple of metres to a trapeze swing before lowering to the ground. Peter Readman, John Winters and Tim

Johnston all took on and mastered this demanding exercise. Other more senior attendees were happy to rest on their laurels and applaud such bravado! It must be added all exercises were done following strict safety standards.

A group dinner was held that evening and the following morning the usual Pot Pourri was held. In this format, members present cases of interest and great discussion was provoked to the extent half a day didn't provide sufficient time.

The afternoon saw a return to the adventure activities, with abseiling down the imposing seaside cliffs at nearby Willyabrup. With the cliffs mastered, the view of the scenic but rugged coastline could be appreciated. It was a weary but exhilarated band who later returned.

The next meeting for the branch will be on 29th October 1999. This will be a one day course held at the Hyatt-Regency Hotel in Perth, open to the profession, and it will feature four speakers:

1. Dr Robert Cooley, formerly from the Dental Department at the Children's Memorial Hospital, Northwestern University Dental School in Chicago but now in Indonesia;
2. Dr Peter Sly, a Respiratory Physician with the WA Research Institute of Child Health and Princess Margaret Hospital for Children;
3. Ms Rachel Martin, a Dental Therapist who will speak on the history and future of Dental Therapy and Dental Hygiene in WA;
4. Last but not least, the Federal President of ANZSPD, Richard Widmer will complete the panel.

**Alistair Devlin.**

# news from the australian academy of paediatric dentistry

During the first week of May 1999 the AAPD held a three-day meeting in Adelaide. This event was particularly significant for a number of reasons.

Firstly, since its inception, the AAPD has not held a stand-alone general meeting due to difficulties in the geographic distribution of members and the time and cost commitments that would be involved in such a meeting. Instead the academy has scheduled its meetings in line with ANZSPD biennial conferences – at which many AAPD members were in attendance. Whilst this situation has been successful in maintaining the general running of the Academy it has led to time constraints that have restricted the process of evaluation and future planning. In this regard this meeting presented the opportunity for members to explore in more detail, issues important to the future of the Academy and the direction of the specialty of Paediatric Dentistry in Australasia. Following a very stimulating guest presentation by Professor John Spencer of The Dental Statistics Unit, The University of Adelaide, the business of the Academy was discussed in detail. During this meeting the election of new office bearers took place and the results were as follows:

President: Dr Peter Gregory  
Vice-President: Dr Bernadette Drummond  
Secretary: Dr Sarah Raphael  
Treasurer: Dr Kareen Mekertichian

Secondly, the recent meeting in Adelaide consisted of not only a general meeting of the Academy but also a joint AAPD/ANZSPD workshop for the development of policies and guidelines for the Standards

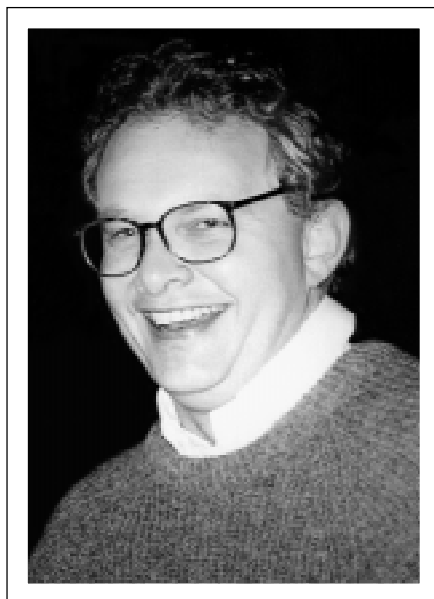
of Care in Paediatric Dentistry in Australasia. During a very stimulating but exhausting one and a half days, members of the Academy and Society of Paediatric Dentistry from Australia, New Zealand and Hong Kong thrashed out policies and guidelines on the following:

- Oral health care programs for children and adolescents
- Emergency oral care for children
- Fluoride
- Early childhood caries
- Dietary guidelines for oral health
- Definition of the dentally handicapped
- Infant oral health care
- Periodicity of examination, preventive dental services and oral treatment for children
- The role of prophylaxis in Paediatric Dentistry
- Definition of dental neglect
- Infection control guidelines
- Immunisation of children
- Hospitalisation for dental care of infants and children
- Breastfeeding
- Prevention of sports-related injuries

- Adolescent oral health
- Minimising health hazards associated with the use of nitrous oxide/oxygen analgesia
- Pharmacologic conscious sedation and deep sedation in paediatric dental patients
- The developing dentition in paediatric dentistry
- Behaviour management
- Pulp therapy for primary and young permanent teeth
- Paediatric restorative dentistry
- Prescribing dental radiographs

Whilst there remains a considerable amount of work to be done on the development of these policies and guidelines it was felt that the process was important and worthwhile. The next meeting of the combined group will be held on the afternoon of Thursday, February 24, 2000 in Adelaide (scheduled in line with the 12<sup>th</sup> Biennial Conference of ANZSPD). It has now been left for members with minuted actions to present their findings back to the joint AAPD/ANZSPD forum. It is envisaged that the discussion and debate phase of the process will be completed at that time allowing the policies and guidelines to be forwarded to the AAPD for ratification.

**Sarah Raphael**  
**Honorary Secretary, AAPD**



## obituary michael david bubb

Michael David Bubb was fatally injured in a plane crash in Papua New Guinea on Thursday June 17, 1999. He is survived by his wife Leigh and their young children, Hannah and Lachlan.

Michael was born in September 1962. After completing his HSC he continued his education at Queensland University graduating with a Bachelor of Science degree (with honours). At age 21 he moved to Sydney and began his working career with British Paints in Technical Service as a Development Chemist on Protective Coatings.

In 1987 he made a significant career move to 3M in their dental products division as a Product Manager. He was responsible for the strategy development of 3M's dental business in Australia and New Zealand.

Michael forged an impeccable reputation with the Australian and New Zealand

Dental profession in the specialist field of restorative dentistry. His outstanding reputation in the dental industry led to Colgate-Palmolive approaching him as Marketing Manager for the Professional Oral Care division in 1990.

During his time in Colgate Oral Care, Michael turned the Professional product range into the highly successful and well respected range we know today. At the same time he worked tirelessly with many Dental Faculties and Institutions, Professional Organisations and Practitioners within the dental field. In doing so he invested significant amounts of personal time and energy in attending various dental meetings and conferences.

In 1996 Michael made a very significant career change and took on a major opportunity as General Manager of Colgate-Palmolive in Papua New Guinea.

Under Michael's direction, the Papua New Guinea business grew significantly in spite of a difficult economic environment. He had a genuine desire to support the continuing learning and literacy of all the C-P factory staff and was an excellent leader.

Once again, through his special talents he improved the business several-fold and won the hearts of the Colgate-Palmolive staff.

One of Michael's strongest skills was his enviable ability to build rapport and relationships with anyone, no matter what their background. It was this gift that endeared him to so many people.

Michael was a dear friend and colleague to many people associated with dentistry in Australasia. His ever cheerful face and larger-than-life personality will be greatly missed.

- 12<sup>th</sup> ANZSPD Biennial Conference. Dentistry for our Children's Future. Hyatt Regency, Adelaide South Australia. 24-26 February 2000. Contact ANZSPD (SA) Dr JJ Wright, 320 Green Hill Road, Glenside SA 5065
- 11<sup>th</sup> World Congress on Dental Trauma. Oslo Norway. 21-24 June 2000. Contact PLUS Convention Norway AS, C. Sundtsgate 10, N-5004 Bergen
- 1<sup>st</sup> World Congress of International Cleft Lip & Palate Foundation. Zurich Switzerland. 1-5 July 2000. Contact Prof Hermann Sailer, University of Zurich, Raemistrasse 100, Zurich CH-8091
- IADR Australian & New Zealand Division. Perth Western Australia. 2-7 July 2000. Contact Dr David Booth, School of Oral Health Sciences, 179 Wellington Street, Perth WA 6000
- 88<sup>th</sup> FDI Annual World Dental Congress. Paris France. 29 November-2 December, 2000. Contact Mr Paul Wilson, FDI World Dental Federation Congress & Exhibition, 7 Carlisle Street, London, England W1V 5RG.
- 30<sup>th</sup> Australian Dental Congress. Brisbane Australia. 4-8 May 2001. Contact Congress Secretariat PO Box 1280 Milton Qld 4064 [ada2001@im.com.au](mailto:ada2001@im.com.au)
- 9<sup>th</sup> International Congress on Cleft Palate and Related Craniofacial Anomalies. Göteborg, Sweden, 24-28 June 2001. Contact Conference Secretariat, Congrex Göteborg AB, Box 5078, SE 402 22 GÖTEBORG, Sweden.
- 89<sup>th</sup> FDI Annual World Dental Congress. Kuala Lumpur Malaysia. 16-19 September 2001. Contact Paul Wilson, FDI World Dental Federation Congress & Exhibition, 7 Carlisle Street, London, England W1V 5RG.

## Australian and New Zealand Society of Paediatric Dentistry

### President

Dr Richard Widmer  
Senior Consultant and Associate Professor  
Paediatric Dentistry  
Westmead Hospital Dental Clinical School  
Head of Department, New Children's Hospital  
Westmead NSW 2145 AUSTRALIA

### Vice President

Dr Kerrod Hallett

### Secretary Manager

Dr Alistair Devlin  
57 Burroughs Road  
Karrinyup WA 6018 AUSTRALIA

### Branch Presidents

|                   |                   |
|-------------------|-------------------|
| New South Wales   | Dr Joanna Seppelt |
| Queensland        | Dr Kim Seow       |
| South Australia   | Dr Sue Springbett |
| Tasmania          | Dr Ashwani Gupta  |
| Victoria          | Dr Eda Franco     |
| Western Australia | Dr John Winters   |
| New Zealand       | Dr Alan Isaacs    |

### Federal Councillors

|                   |                        |
|-------------------|------------------------|
| New South Wales   | Dr Richard Widmer      |
| Queensland        | Dr Kerrod Hallett      |
| South Australia   | Dr Sue Springbett      |
| Tasmania          | Dr Ashwani Gupta       |
| Victoria          | Dr John Wilde          |
| Western Australia | Dr John Winters        |
| New Zealand       | Dr Bernadette Drummond |

### Editor Synopses

Dr John Winters

### Correspondence

Synopses  
Suite 7, The Perth Surgicentre  
38 Ranelagh Crescent  
South Perth WA 6151 AUSTRALIA

### Printing and Distribution

Colgate Oral Care  
Level 15, 345 George Street  
Sydney NSW 2000 AUSTRALIA



### Deadline next issue

31<sup>st</sup> December 1999

The mailing list for the distribution of Synopses is maintained by Dr John Winters on behalf of the Federal Secretary/Manager of ANZSPD. It is compiled from information supplied by the Branch Secretaries. If there are errors in your mailing details, please contact Dr Winters or your Branch Secretary. Do not contact Colgate for address correction.

All material for inclusion in Synopses must be submitted to the Editor on floppy disk or by email. Both PC and Mac formats are accepted. Floppy disks will not be returned. Address email to [jwinters@cyllene.uwa.edu.au](mailto:jwinters@cyllene.uwa.edu.au). Please enclose your contact details and email address with all submissions.